

Amendments to the Claims

Please amend the claims as follows:

1. (Currently Amended) A countercurrent chromatography apparatus comprising:
a column assembly comprising a plurality of plates, each of the plurality of plates
defining an inlet, an outlet, and a plurality of interleaved spiral flow
channels, the inlet being in fluid flow communication with one of the
plurality of interleaved spiral flow channels and the outlet being in fluid
flow communication with another of the plurality of interleaved spiral flow
channels, each of the plurality of interleaved wherein at least one of said
plurality of plates comprise at least first and second interleaved spiral flow
channels formed therein, wherein each of said spiral flow channels in one
of the plurality of plates includes a first end and a second end, wherein
said first ends are closer to the central axis of said plate than said second
ends, and wherein the second end of said first spiral flow channel is in
fluid flow communication with the first end of another one of the plurality of
the second interleaved spiral flow channels in the same one of the plurality
of plates channel.
2. (Currently Amended) The countercurrent chromatography apparatus of claim 1,
additionally further comprising a plurality of septa positioned on either side of the
each of the plurality of plates between pairs of said plates, wherein at least some
of said the plurality of septa comprise includes a hole which is positioned to
establish a fluid connection between a second end of a one of the plurality of
interleaved spiral flow channels channel in one of said plurality of plates and a
first end of a another one of the plurality of interleaved spiral flow channels
channel in a second another one of said plurality of plates.
3. (Currently Amended) The countercurrent chromatography apparatus of claim 1,
further additionally comprising an upper flange and a lower flange plates, the
plurality of plates being interposed between the upper flange and the lower

flange and wherein at least ~~the one of said upper flange plate and said or the~~
lower flange plate ~~comprises~~ includes a gear.

4. (Currently Amended) A plate for use in countercurrent chromatography comprising:
 - a first surface defining an inlet and an outlet ;~~and~~ a second opposed surface;
 - a plurality of interleaved spiral flow channels defined along the first surface, wherein the inlet is in fluid flow communication with one of the plurality of interleaved spiral flow channels and the outlet is in fluid flow communication with another one of the plurality of interleaved spiral flow channels, each of the plurality of interleaved spiral flow channels having an inner end and an outer end; and
 - at least one flow path to establish fluid flow communication between ~~connecting~~ an outer end of at least one of said interleaved spiral flow channels with ~~to~~ an inner end of another ~~a different~~ one of said interleaved spiral flow channels.
5. (Currently Amended) The plate of claim 4, wherein said plurality of interleaved spiral flow channels comprises ~~comprise~~ grooves formed in said first surface.
6. (Currently Amended) The plate of claim 5, wherein said flow path comprises a groove formed in said second opposed surface.
7. (Currently Amended) The plate of claim 6, wherein said groove extends substantially radially from a point closer to the outer surface of said second opposed surface to a point close to the central ~~center~~ axis of said second opposed surface.

8. (Currently Amended) The plate of claim 4, wherein said plurality of interleaved spiral flow channels have a substantially rectangular cross section.
9. (Currently Amended) The plate of claim 5, wherein said plurality of interleaved spiral flow channels comprises ~~comprising~~ four interleaved spiral grooves in said first surface.
10. (Currently Amended) The plate of claim 6, comprising four interleaved spiral grooves in said first surface and four radially extending grooves in said second surface for establishing fluid flow communication between each of the four interleaved spiral grooves.
11. (Currently Amended) A countercurrent chromatography apparatus comprising:
a column assembly, ~~wherein the column assembly comprises~~ having a plurality of coupled separation disks, ~~and wherein each of said coupled separation disks comprises at least two~~ defining an inlet and an outlet, and further defining a plurality of interleaved spiral flow channels, with the inlet being in fluid flow communication with one of the plurality of interleaved spiral flow channels and outlet being in fluid flow communication with another one of the plurality of interleaved spiral flow channels, at least one of the plurality of interleaved spiral flow channels being in fluid flow communication with at least another one of the plurality of interleaved spiral flow channels wherein each of said plurality of interleaved spiral flow channels comprises a first an inner end and a second an outer end, wherein the inner end of each of the plurality of interleaved spiral flow channels is said first ends are closer to a central control axis defined through each of the plurality of said separation disks than said outer end of each of the plurality of interleaved spiral flow channels second ends,
and wherein the outer second end of at least one of said interleaved spiral flow channels is in fluid flow communication with the inner first end of

another ~~a different~~ one of said interleaved spiral flow channels.

12. (Currently Amended) The apparatus of claim 11, wherein the outer end ends of each at least one of the plurality of interleaved spiral flow channels of one of the plurality of coupled separation plates is channel ~~are~~ in fluid communication with the inner end ends of different another one of a plurality of interleaved spiral flow channels in another plurality of coupled separation disks.

13 -19 (Canceled)

20. (Currently Amended) A countercurrent chromatography apparatus comprising:
a series of coupled plates;
a groove means in said plates for routing fluid through a plurality of interleaved spiral flow paths,
wherein each of said plurality of interleaved spiral flow paths comprises a first end and a second end, wherein said first ends are closer to a ~~control~~ central axis of said plates than said second end ends and wherein the second end of at least one of said plurality of interleaved spiral flow paths is in fluid flow communication with the first end another a different one of said plurality of interleaved spiral flow paths, wherein the first end of one of the plurality of interleaved spiral flow channels is in fluid flow communication with an inlet and the second end of another one of the plurality of interleaved spiral flow channels is in fluid flow communication with an outlet.

21. (Previously Presented) The apparatus of claim 20, wherein said groove means is provided on first and second sides of at least one of said plates.

22-24 (Canceled)

25. (Currently Amended) The apparatus of claim 21, wherein said groove means on said first side of at least one plate is a plurality of spiral flow paths and said groove means on said second side of at least one plate is substantially radial flow path connecting the outer end of at least one spiral flow path to the inner end of a different one spiral flow path.